

No. XI.—This storm having every appearance of a cyclone, first appeared on our tri-daily maps on the 27th, at 4.35 p. m., east of Florida and moving slowly northward. It was preceded by heavy rain and northeast to southeast gales on the North Carolina coast. It was on the 28th, at 7.35 a. m., southeast of Wilmington, where heavy rain was reported, but no wind, owing to its sheltered location. The barometer had for the previous week been highest to the north of Cape Hatteras, and northeast winds increasing to gales, had prevailed along the South Atlantic coast ever since the disappearance of low barometer No. VI. Owing to its slow progress this storm was very severely felt from Cape Lookout to Cape Henry, where steady northeast gales and high seas continued. The U. S. Steamer Frolic reports experiencing a hurricane on the 22nd and 23rd on the routes between Curacao, Venezuela (latitude  $12^{\circ}$  N, longitude  $69^{\circ}$  W.), and Porto Rico. The storm-centre was probably then moving northwest and must be identical with the present No. XI. On the 24th the observers at Kingston and Santiago de Cuba reported every appearance of a hurricane at a distance to the northeast. On the 21st a cyclone was reported at St. Vincent and Grenada, (about  $8^{\circ}$  of longitude east of Curacao,) which therefore apparently extends the path of this cyclone back into the Atlantic ocean.

No. XII.—An area of low barometer appears on the 28th, at 11 p. m., in Western Dakota. On the 29th it moved eastward to Minnesota, and on the 30th extended in a long oval from Iowa northeastward. It was accompanied by little or no rain, and its high winds died away as the depression filled up and disappeared.

No. XIII.—This cyclone existed in the Caribbean sea on the 27th, and will be described in the October Review.

*Storms at Sea.*—The following notes have come to hand relative to storms experienced at sea: 2nd, lat.  $40^{\circ} 10'$  N., lon.  $70^{\circ} 42'$  W., heavy SW., squall; 7th, hurricane passed north of St. Thomas; a gale off Kent Island Flats, Md.; 9th, lat.  $49^{\circ} 34'$  N., lon.  $37^{\circ} 38'$  W., NW., gale; 10th, lat.  $49^{\circ} 50'$  N., lon.  $38^{\circ} 43'$  W., strong gale, NE. to W. by N., high NW. sea; lat.  $47^{\circ} 20'$  N., lon.  $37^{\circ} 21'$  W., strong gale, NNW. to NNE., head sea; lat.  $48^{\circ} 11'$ , lon.  $44^{\circ} 14'$ , NNW. gale; 11th, lat.  $49^{\circ} 34'$  N., lon.  $24^{\circ} 33'$  WNW. gale; 11th, off Rough and Ready, Cal., strong northwest gale; 12th, lat.  $49^{\circ} 18'$  N., lon.  $18^{\circ} 39'$  W., fresh W. gale, heavy squalls and thick rain; lat.  $49^{\circ} 44'$  N., lon.  $6^{\circ} 54'$  W., fresh SW. gale; 13th, lat.  $49^{\circ} 32'$  N., lon.  $39^{\circ} 10'$  W., strong W. gale, very high sea; lat.  $47^{\circ} 25'$  N., lon.  $37^{\circ} 42'$  W., hard gale and high sea; lat.  $49^{\circ} 18'$  N., lon.  $22^{\circ} 19'$  W., fresh NNW. gale; lat.  $50^{\circ} 18'$  N., lon.  $13^{\circ} 28'$  W., fresh SW. gale; Mabow, C. B., gale during night. 14th, lat.  $46^{\circ} 09'$  N., lon.  $46^{\circ} 18'$  W., strong W. gale, very high sea; lat.  $51^{\circ} 24'$  N., lon.  $14^{\circ} 47'$  W., fresh SW. to NW. gales; lat.  $50^{\circ} 06'$  N., lon.  $28^{\circ} 39'$  W., SW. storm, high sea. 14th and 15th, lat.  $44^{\circ}$  N., lon.  $54^{\circ}$  W., gale. 17th, lat.  $49^{\circ} 29'$  N., lon.  $33^{\circ} 12'$  W., strong SW. gale. 16th and 17th, midnight, about lat.  $26^{\circ} 0'$  N., lon.  $64^{\circ} 30'$  W., hurricane. 17th,  $30^{\circ} 19'$  N., lon.  $56^{\circ} 45'$  W., hurricane from E. veering to W., with terrific sea, lasting 24 hours and moderating to SW. 17th, steamship State of Texas, lat.  $27^{\circ} 50'$  N., lon.  $89^{\circ} 56'$  W., fresh SW. gales and heavy seas. 18th, 2 a. m., steamship State of Texas encountered gale 360 miles from Galveston; noon, lat.  $27^{\circ} 53'$  N., lon.  $91^{\circ} 10'$  W., heavy SW. gales and seas; 4 p. m., wind hauled to north. On the 19th, lowest barometer was 29.65, about 160 miles SE. of Galveston. 18th and 19th, about lat.  $26^{\circ} 0'$  N., lon.  $64^{\circ} 30'$  W., hurricane from S. W.; 19th, lat.  $49^{\circ} 09'$  N., lon.  $31^{\circ} 04'$  W., SW. storm; 20th, brig Woodcock, at Halifax, N. S., Sept. 23d, from Inagua, reports: 20th, midnight, on northern edge of Gulf Stream, severe E. N. E. gale, veering to N. W., lasting 48 hours; lat.  $33^{\circ}$  N., lon.  $50^{\circ}$  W.; heavy S. S. W. gale, lasting 24 hours; 21st, Northwest Shoals, off coast of Massachusetts northerly gale; off Whitehaven, N. S., gale; St. Paul's Island, C. B., perfect hurricane, lasting 15 hours; Straits of Florida, violent gale; 22nd, Barbadoes and St. Vincent, NE. storms and hurricane; Steamer Alhambra, from Charlottetown to Halifax; September 23rd, off Nova Scotia, severe storm, steward washed overboard, boats smashed, also on the 22d, lat.  $40^{\circ} 22'$  N., lon.  $70^{\circ} 52'$  W., fresh NNW gale; lat.  $41^{\circ} 21'$  N., lon.  $66^{\circ} 16'$  W., fresh NNW gale; lat.  $40^{\circ} 20'$  N., lon.  $70^{\circ} 50'$  W., heavy NW gales and sea. 23d, lat.  $48^{\circ} 13'$  N., lon.  $57^{\circ} 08'$  W., heavy W. gale; lat.  $42^{\circ} 15'$  N., lon.  $58^{\circ} 19'$  W., fresh W. to NW. gale; lat.  $49^{\circ} 19'$  N., lon.  $42^{\circ} 08'$  W., heavy SSW. gale. 23d and 24th, lat.  $36^{\circ} 59'$  N., lon.  $74^{\circ} 50'$ , heavy NE. gale. 24th, Mount Hope Bay, R. I., gale; lat.  $46^{\circ} 48'$  N., lon.  $39^{\circ} 49'$  W., fresh E. gale. 25th, lat.  $45^{\circ} 38'$  N., lon.  $41^{\circ} 56'$  W., severe N. gale, lasting 27 hours; lat.  $49^{\circ}$  N., lon.  $17^{\circ}$  W., heavy gale. 26th, lat.  $45^{\circ} 36'$  N., lon.  $50^{\circ} 35'$  W., fresh NE. gale. 28th, off Hog Island, heavy ESE. gale. 29th, off Cape Hatteras, cyclone from NE.

## TEMPERATURE OF THE AIR.

*In General.*—The general distribution of the temperature of the air is shown by the isotherms on chart No. II. The table of comparative temperatures, in the left hand corner of same chart, shows the temperature of the month to have been higher than usual over the whole country, excepting in the mountainous region of Utah, Colorado and New Mexico. The excess is greatest in the Northwest and Upper Lake region; somewhat less over the Lower Lakes and New England, and still less along the Middle and South Atlantic States, while in the Gulf States, Tennessee and Ohio valley, it is only about half a degree above the normal; as is also the case on the Pacific coast.

*Monthly Mean Temperatures at Special Points* have been as follows: Mt. Washington, 42°.4, Pike's Peak, 30°9.

*Maximum and Minimum Temperatures.*—Maximum temperature, at Signal Service stations, above 95°, are reported as follows: 96° at Savannah, Jacksonville, Vicksburg, Indianola, Boerne, Castroville,; 97° at Montgomery, Salinas City, Cal.; 98° at Shreveport, Fort Sill, Sacramento; 99° Denison, Fort Griffin; 100° Brackettville, Corsicana, San Antonio, Campo; 101° Cambridge, Visalia; 102° Eagle Pass; 103° Laredo; 104° Phoenix, Uvalde; 106° Red Bluff; 107° Maricopa Wells; 108° Fresno, Wickenburg; 112° Fort Yuma. From stations other than those of the Signal Service, *maximum temperatures* have also been reported as follows: 96° Ft. Hayes, Kan. Hennepin, Ill.; 98° Clarksville, Tex.; 99° Baton Rouge, La.; Ft. Richardson, Tex., Camp Sheridan, Neb. 100°, Ft. McPherson, Neb. 101°, Ft. McKavett, Tex. 102° Ft. Rice, Dak.; Ft. Griffin, Tex.; Ft. Clark, Tex.

*Minimum temperatures* below 35°: 34°, Breckenridge, Minn., Umatilla; 33°, Bismarck, and Lower Brule Agency, Dak., Hayes' City, Kan.; 32°, Winnemucca, Neb., Woodstock, Vt.; 30°, Ft. Abercrombie, Dak., Pembina; 29°, Ft. Randall, Dak., Orono, Me.; 28°, Nile, N. Y.; 27°, Cheyenne, Wv., Sydney B'ks, Neb.; 26°, Summit, Col.; 25°, Neillsville, Wis.; 23°, Ft. Pembina, Dak.; 21°, Coalville, Utah; 20°, Mt. Washington, N. H.; 11°, Pike's Peak, Col.

The maximum temperatures of the month may be divided into three periods, the first of which occurred from the 1st to 3d in the West Gulf, South and Middle Atlantic States; the second from the 10th to 16th gradually extending from Colorado, Nebraska and Minnesota over the Mississippi valley as far south as Alabama, and thence over the Lake region, New York and New England; and the third on the 30th extending from Lakes Michigan and Huron southward to the Ohio valley.

The minimum temperatures occurred, almost without exception, from the 17th to the 23d, attending the advance of area of high pressure No. III, first from Utah to Iowa and northward, gradually extending thence to the Atlantic coast.

*Ranges of Temperature.*—The large monthly or diurnal ranges have been respectively as follows: Bismarck, monthly, 49°, diurnal 46°; Pembina, 59° and 47°; Breckenridge, 58° and 44°; Winnemucca, 57° and 50°; Umatilla, 61° and 39°; Campo, 69° and 56°; Fort Griffin, 49° and 44°; Cheyenne, 56° and 43°; North Platte, 55° and 45°; Denver, 55° and 45°; Visalia, 55° and 42°; Red Bluff, 54° and 36°; Marquette, 52° and 35°; St. Paul, 52° and 32°; Yankton, 51° and 42°. The least monthly and diurnal ranges have been, respectively, as follows: Cape Hatteras, monthly, 20°, diurnal 11°; St. Marks, 27° and 22°; New Orleans, 29° and 15°; Charleston, 29° and 17°; Jacksonville, 29° and 27°; Punta Russa, 20° and 17°; Key West, 22° and 13°; Cape Henry, 22° and 1°.

*Frosts*, were experienced as follows.—From the 1st, to the 4th, in Iowa, Wis., Ill., Ind. Mich., Ohio, N. Y., and on Mount Washington; on the 5th and 6th, near Lake Superior; on the 7th and 8th on Mount Washington and in northern Maine; on the 8th and 9th, Utah and Col.; from the 17th to 23rd, the first general extensive frost of the season was experienced, being felt first in Utah and Col., and extending thence eastward over the entire country north of the 37th degree of latitude, to the Middle Atlantic and New England coast. Slight damage was reported to vegetation in Col., Dak., Ind., Iowa, Mass. Wis.

*Ice*—was reported on the 1st and 2nd at Detroit; from the 8th to the 10th at Coalville, Utah; 17th, Virginia City, one-eighth of an inch thick; on the 18th, one-sixteenth of an inch at Cresco, Iowa, and Embarrass, Wis.; on the 22nd, ice at Strafford, Vt.

## PRECIPITATION.

*In General.*—The general distribution of rain for the month is shown on chart No. III. The table in the lower left-hand corner gives the average precipitation in the various districts. This table shows a large excess in the Gulf, South and Middle Atlantic coast States, and in Tennessee and Minnesota, and deficiencies from New England westward over the Lake region and Ohio valley to the Upper Mississippi and Missouri valleys. This is almost the reverse of the report for August, and is due mostly to the heavy rain-falls attending the storms Nos. II, VI and XI, shown on chart No. I. As was the case in August, considerably over the average amount has also fallen this month in Oregon, while in California no rain has been reported.

*Special Heavy Rains.*—The following are the most notable cases of heavy rains that have been reported: 1st—Wilmington, N. C., (1st and 2d,) 5.02 inches; Jacksonville, Fla., 2.00 in.; Anna, Ill., 2.62 in.; Brownsville, Mo., 2.25. 2nd—Cheyenne, Wv. Ter., 1.07 in.; Melissa, Tex., (2nd to 4th,) 3.00 in.; Coleman City, Tex., 2.45 in.; Concho, Tex., 1.34 in. 3rd—Shreveport, La., (3rd, 4th and 5th,) 8.59 in.; 6 inches in 8 hours on the 4th; Fort Griffin, (3rd and 4th,) 2.51 in.; Cambridge, Tex., (3rd and 4th,) 2.12 in. 4th—Fayette, Miss., 2.10 in.; Coleman City, Tex., Miss., 1.79 in.; Stockton, Tex., 1.94 in.; Concho, Tex., (4th and 5th,) 2.02 in. 5th—Pilot Point, Tex., 3.87 in.; Boerne, Tex., 1.84 in.; Coleman City, Tex., 2.16 in. 6th—Galveston,